

### Notes on Insects infesting the Currant and Gooseberry.

To those who pay any attention to the cultivation of the Currant and Gooseberry, the following notes may prove both serviceable and interesting.

We do not pretend to give here any new information concerning the depredations of these insects, nor to suggest any new remedies for their destruction, for since the publication of Harris' and Fitch's works on Noxious Insects, little or nothing has been published on this sadly neglected subject. Perhaps not one Farmer in five hundred has had the opportunity of reading the writings of either Harris or Fitch, while the PRACTICAL ENTOMOLOGIST is within reach of the humblest Farmer, and the information given in its pages will be more widely circulated, and consequently prove more useful. For these reasons, the following notes have been compiled for publication in this Bulletin.

#### §.—Affecting the stalks.

THE AMERICAN CURRANT BORER.—*Psenocerus supernotatus* Say.

The larva of this insect is a small, cylindrical, white, footless grub, with the head brown and the jaws black. It feeds upon the pith of the stalks, and therefore killing them. It passes its pupa state in the stalks, and in the latter part of May or beginning of June changes to a small, narrow, cylindrical, brownish beetle, darker behind the middle, with a whitish dot a little before the middle of each wing-case, and a large, slightly oblique mark of the same color just behind the middle; the horns or antennæ are slender and nearly as long as the body.

Dr. Fitch, who has written considerably about this insect in his Reports to the New York State Agricultural Society, says:

"In all our gardens numbers of the currant stalks perish every season. To such an extent does this mortality prevail, that this fruit would soon disappear from our country were it not that the roots of this shrub are so vigorous, sending up a multitude of new shoots every year, whereby the places of those that perish are constantly re-supplied.

"After the leaves have fallen in the autumn and during the winter, these dead stalks are readily distinguished from the live ones by being dotted over with a pretty little fungus the size of a pin head, and of a pale bright red color and a corky texture."—(Third Report, § 134.)

The parasite of the Currant borer, whether of this or the European borer, it is not yet satisfactorily ascertained, is a small Ichneumon-fly, about one-tenth of an inch in length, black, with the legs, the fore-breast and base of the abdomen, yellowish.

As to the most reliable method of destroying the Currant borer, we can do no better than to quote the words of Dr. Fitch, which are as follows:

"We have only to state in conclusion that the utter carelessness with which the currant is treated in most of our gardens, with a thicket of young shoots annually left unpruned and crowding upon and smothering each other, gives these borers and other pernicious insects the utmost facilities for lurking unmolested and pursuing their devastating work without interruption. Were this shrub suitably trimmed and kept thinned out to only three or four stalks from each root, these stalks growing freely exposed to the light and air, would be little if any infested by these depredating insects.

"As these worms remain in the dead stalks through the winter, their destruction is easily effected. By breaking off all the dead brittle stalks at the surface of the ground and burning them, these borers may at once be exterminated from the garden. But they will soon find their way back again unless the bushes are well pruned every year."—(Ibid.)

THE EUROPEAN CURRANT BORER (*Trochilium tipuliforme* Linn.) is an insect which destroys our Currant bushes in the same manner as the American borer, but instead of the perfect insect being a beetle, it is a small black wasp-like moth, with three narrow yellow bands on the abdomen; the wings are transparent, margined with black and tipped with copper-color. The larva is a small, whitish grub, with a darker line down the middle of its back, and with the head and legs brown; it changes to pupa within the stalk, and appears a perfect insect the fore part of June.

The same remedy suggested for the American borer is applicable to this insect, both having similar habits.

About the last of May, the young stalks of the Currant are sometimes severed by a cut-worm, about  $\frac{1}{4}$  inch long, of a shining bluish-brown color, with faint dots regularly arranged, each bearing a short fine hair; the head is reddish-brown, as well as a spot on the neck and another on top of the last segment. In June it enters the ground, and the perfect insect, a rather large moth, appears during July. Dr. Fitch has named it the "Amputating brocade moth,"—*Hadena amputatrix*," but was previously described by Boisduval as *Manestra arctica*; it is mentioned in Harris (*Inj. Ins.*) as *Hadena amica*. The anterior wings, above, are blackish, varied with reddish-brown and cinereous, with a broad, submarginal, oblique, ashen-gray band, and a spot of the same color a little beyond the middle near the anterior margin; the posterior wings are silky-greyish, with a broad dusky band behind, as well as a dusky spot above the middle of each wing, much more distinct on the under side; the body is pale reddish-brown, with dorsal and apical tufts.

There are three species of Bark lice mentioned by Dr. Fitch (*Third Report*, pp. 108 and 109) as being found upon the bark of the Currant stalks; the first a minute oyster-shaped scale (the "Apple bark-louse, *Aspidiotus conchiformis*"), more common upon the Apple; the second a minute flat, circular scale (the "Circular bark-louse, *Aspidiotus circularis*") "being of the same blackish-brown hue with the surrounding bark, and having in the centre a smooth, round, wart-like elevation, of a pale yellow color;" and the third a hemispherical scale (the "Currant bark-louse, *Lecanium ribis*"), of a brownish-yellow color, with its margins finely and transversely wrinkled. These minute depredators are often very numerous, sometimes crowded together in such numbers as to wholly cover the bark, which they puncture with their little beaks and suck out its juices. They belong to the suborder HOMOPTERA, family COCCIDEÆ, to which the Cochineal insect, so highly prized as a material for dyeing, also belongs.

#### §§.—Affecting the leaves.

THE AMERICAN CURRANT MOTH.—*Ellopiia ribearia* (Walker)—*Abrazas? ribearia*, Fitch.

This is a very destructive insect to the Currant in this country. It is a long, cylindrical, yellow measure or spaw-worm, varied on the sides with white, and with numerous black spots regularly arranged; from each spot or dot proceeds a black hair; it is found eating the leaves of the Currant, as well as the Gooseberry, from the middle of May to the middle of June, sometimes stripping the bushes entirely naked. The worms descend to the ground, and burying themselves slightly beneath the surface, change to the pupa state; the pupæ are of a shining black color, about half an inch long, and are easily detected; they may be found in abundance in the earth, immediately beneath the defoliated Currant and Goose-

berry bushes, about the middle or last of June. The perfect insect is a pale yellowish moth, the wings with several more or less dusky spots, sometimes arranged into one or two irregular bands across the wings.

Dr. Fitch has described and figured this insect in its different stages, in the Transactions of the New York State Agricultural Society, Vol. 7, where he gives much interesting information concerning its habits, and suggestions for its extermination. On this latter subject Dr. Fitch says:

"This Insect is so closely related to the Gooseberry-moth of Europe, that we may confidently infer, that those measures only which have been found efficacious for checking the ravages of that species, can be of material avail against this. Numerous remedies have there been resorted to such as sifting the fine dust of soot, of ashes, &c.; repeatedly over the bushes: sprinkling with lime-water, or with decoctions of tobacco, of fox-glove, of elder, &c.; by successive shakes of the bushes, causing all the worms to descend to the ground, and then lying cabbage-leaves around the base of the stalks, over which, it was reported, the worms would not crawl to re-ascend. But none of these remedies have established themselves in public favor; and the only measure which is recommended with confidence, by all the more intelligent writers, is that of 'hand-picking,' as it is termed. This, though tedious, is said to be, in the end, the most economical of any measure known, and the only one on which full reliance can be placed. It is commonly accomplished by suddenly jarring the bush, and then with a forked stick or some similar implement, gathering those worms that have let themselves down by threads, and crushing them beneath the foot. This process requires to be repeated three or four times to free a bush from these worms, as but part of them let themselves down on the first agitation.

"This remedy should be resorted to with our insect as soon as the young worms are discovered upon the bushes, and if perseveringly followed up, will, no doubt, be effectual. The task, however, will be a formidable one, to thus free a garden of countless numbers of these larvae by which it is infested; and the measure can only be resorted to with facility in those gardens where the bushes are kept well thinned by pruning.

"A less laborious mode of reducing the numbers of our moth, in badly infested gardens, it strikes me is so feasible, that some may be disposed to test its efficacy by giving it a trial. As already stated, the worms having completed their growth, bury themselves slightly in the ground under the bushes, where they lie several days in their pupa state, and then the winged moths come from these pupae and make their way out of the ground. Now if the surface of the earth beneath Currant and Gooseberry bushes be carefully levelled and made smooth with a rake, it will be but a slight labor, when the worms have mostly left the bushes and buried themselves, to closely cover the ground beneath and around the bushes with boards, or pave it with bricks, should these be at hand, allowing this covering to remain three or four weeks. The winged moths, on coming from their pupa shells, would probably then be unable to make their way into the air, and would perish in their confinement. The efficacy of this measure would be indicated, on removing the boards, by the numbers of dead moths on the surface of the ground beneath them."

There is another worm which is said to be very destructive to the Currant and Gooseberry bushes, and which does not seem to have been mentioned by either Harris or Fitch. We copy the following account of this insect, given by Mr. Otis Bigelow of Onondago Co., N. Y., in the *American Agriculturist* for May 1865, p. 141:—

"About three years since, people in this vicinity were surprised to find their Currant and Gooseberry bushes suddenly deprived of their leaves. On examination we found the bushes covered with a myriad of green worms, speckled with black spots on the back and sides, and about three-quarters of an inch long when full grown. As soon as the leaves start in the Spring, a fly appears and lays its eggs along the stems on the under side of the leaf, or some of the leaves in the middle of the bush; these soon hatch and devour all the leaves clean, for about a week, when they change their skins to a pale green, and falling

to the ground, disappear. By sifting the earth under the bushes, they will be found enclosed in little balls of it. In three weeks they come out as flies; the size of a common fly, which they nearly resemble, excepting that they are more slim and have a yellow abdomen. The reproduction of these worms is continued until all the leaves are destroyed. Remedy.—Dig up all the bushes that cannot be personally attended, and trim the remainder so as to leave them open and accessible. Visit them at least once every day. Look for leaves with little holes in them. The little holes indicate the presence of the newly hatched worms, which are not seen unless the leaf is turned up, as they always begin on the under side. By destroying four or five leaves on each bush per day the whole may be saved, as only a few leaves are selected by the fly to deposit her eggs. The worms never touch the fruit, and the stripping of the leaves does not prevent a new growth the same season, but these will no sooner appear than they are destroyed."

This worm is the larva of a Hymenopterous insect, *Scandria Ribis* of Prof. A. Winchell, who published an account of its history in the *Detroit Free Press* of July 9th, 1864; the same article is published, in a condensed form, in *Silliman's American Journal of Science and Arts*, September, 1864, p. 291. We shall publish, in a subsequent number of the BULLETIN, a detailed history of this destructive insect, by a correspondent who is now gathering the necessary information.

#### ???.—Affecting the fruit.

Dr. Fitch (*ibid.*) mentions two insects which attack the fruit of the Gooseberry, viz: the "Gooseberry Moth" and the "Gooseberry Midge." The first, in its larval state, is a "slender greenish worm, about half an inch long, with a dark colored nose, a dark band across the top of its neck, and the three forward pairs of feet of the same color, which forms a tube of silken threads from the cavity in the berry through a hole in its side to an adjacent leaf, through which it crawls out and in." The fruit, when about half grown, perishes, its interior being ate out by the worm. So far as known, this insect has not been obtained in its perfect or "moth" state, but Dr. Fitch supposes it to belong to *Tineida*, a family of Micro-Lepidoptera, or small moths.

The "Gooseberry Midge" (*Cecidomyia grossulariæ*, Fitch) is a minute, yellowish, two-winged fly, somewhat resembling a mosquito. The perfect insect punctures the young fruit of the Gooseberry, and deposits its tiny eggs therein; these eggs develop into minute, bright yellow maggots, which cause the fruit to have a prematurely ripe appearance, turning red and dropping off.

As a remedy against these insects, Dr. Fitch suggests the following:—"All fruit upon the Gooseberry bushes which is found prematurely decaying and assuming a ripened appearance, and all which falls to the ground, should be gathered and thrown into the fire, to destroy the worms which the berries contain. By attention to this measure the haunts of this insect in the garden can be easily broken up, whereas, if this step is neglected the evil will be liable to continue year after year. As this insect breeds equally well in the wild Gooseberries, we cannot hope to exterminate it from our country. But none of these wild Gooseberries should be permitted to grow in the vicinity of the gardens, for from them, if near, this midge will continually be finding its way to the bushes of the cultivated Gooseberry." (*First Report*, p. 176.)

Those of our Western readers who have information to communicate for publication in the BULLETIN, will please forward it as early in the month as possible, to BENJ. D. WALSH, Esq., Rock Island, Ill.